ABSTRACT OF THE DISCLOSURE

Methods and systems for obtaining a motion vector between two frames of video image data are disclosed. Specifically, methods and systems of the present invention may be used to perform a block-matching algorithm

5   over a two-dimensional search area in a manner that reduces number of comparisons. In particular, the method determines a best candidate block for each strip based by searching in a first dimension of a two-dimensional search area and based on a predetermined difference criterion. The method then determines a second set of best candidate blocks by performing a

10   limited search in the other direction based on the results from the search in the first dimension. The method then determines a motion vector for the best candidate block. Integral projection arrays may be used to further optimize the search. The methods and systems of the present invention may be used in optimizing digital video encoders, decoders, and format converters.